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MR. JAYNES AND THE BICAMERAL MIND:
A CASE STUDY IN THE SOCIOLOGY OF BELIEF

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Why does anyone take seriously Mr. Jaynes' view that consciousness had its origin in the breakdown of what he calls the bicameral mind? To approach Mr. Jaynes' book¹ in the context of this question has the advantage of leading us away from the book itself and into the sociology of knowledge -- rather, into what is better called the sociology of belief. To think of the book as a case study in the sociology of belief, justifies our making a rather detailed analysis of it: only in this way can we see how implausible Mr. Jaynes conclusions are and so lay the basis for answering the question: Why, despite its implausibility, is the book taken seriously by thoughtful and intelligent people?

Mr. Jaynes' major contentions are, first, that four great changes -- changes not previously noted by any historian of culture -- occurred towards the end of the third millennium BC and, second that, taken together, these changes account for the leading features of post-third-millennium culture.

One of these four changes was a radical transformation of human experience from a completely unthinking, stimulus-response type of behavior to the self-conscious, reflective type of experience that we are familiar with today.

A second change was a change in the mode of social control -- from an automatic control -- never before identified by any student

of social or political behavior, but analogous to the control a hypnotist exerts over his patients -- to the nonautomatic kinds of control -- by threat, cajolery, bribery, or rational persuasion -- that we know today.

The third change was a change in the incidence of what Mr. Jaynes calls "florid, unmedicated" schizophrenia: before the end of the third millennium BC "everyone was schizophrenic" (p. 405), and, what is more, everyone was schizophrenic all the time (p. 140). Thereafter the incidence greatly declined.

The fourth change was a change in the function of that area on the right hemisphere that corresponds to Wernicke's area on the left hemisphere.

Since it appears -- judging both by the title of the book and also by the amount of space devoted to "the origin of consciousness" -- that this is the centerpiece of Mr. Jaynes' case,² I shall begin by examining his claims regarding the nature of this supposed transformation in the quality of human experience.

An introductory chapter reviews earlier answers to the question, what is consciousness -- answers which Mr. Jaynes rejects as wholly inadequate. From this spectacular history of failure (I agree with Mr. Jaynes about the inadequacy), one might reasonably conclude that the question has been incorrectly¹ posed, that it is incapable of being answered in the form in which it has been posed. But Mr. Jaynes does not consider this possibility; instead, the chapter ends with the observation, "we must therefore try to make a new beginning by stating what consciousness is" (p. 18), and

Chapter 2 is duly devoted to setting out the answer that, for the first time, really and finally explains not only what consciousness is but whence it comes.

Consciousness arises, according to Mr. Jaynes, from language, and specifically from metaphor. If one tries to unpack this gnomic saying, one gets something like the following series of propositions. (1) We³ tend to think about and talk about consciousness as occurring in some sort of container (e.g., "I haven't an idea in my head"). (2) This is a metaphor. (3) Metaphors are misleading if they are taken literally, i.e., if we fail to understand that they are metaphors. (4) This sort of confusion -- the literalizing of metaphor -- has occurred in the case of consciousness. (5) Consciousness is not (literally) a "thing" or "repository"; it is an "operator," a "function" (pp. 55, 58). Who can disagree? But in its unpacked form Mr. Jaynes' great discovery is hardly a novelty: writers as diverse as Kierkegaard and Nietzsche, Brentano and Sartre, Husserl and Russell have all pointed out that it is misleading to spatialize consciousness and that our conclusions about the self are (as Nietzsche remarked) "formulated out of our grammatical custom."⁴

Let us agree, then, that the language in which talk about consciousness is conducted is metaphorical. But does it follow, as Mr. Jaynes claims, that consciousness "is" metaphorical or that it has been "created" by metaphor? Certainly the experiential field of people who possess language is very different from the experiential field of people (e.g., babies) who lack language. In one sense of the term "creates" one can therefore say that language creates the world

of people who possess language -- in the sense, namely, that their experience would be very different without it. But in this sense of "creates"; language creates everything else as well, for everything in the experience of people who possess language is touched, colored and shaped by language. Thus there is nothing unique, spectacular, or even particularly interesting in attributing the origin of consciousness to language -- in this sense of "creates." Now there is another sense of "create," in which the term means cause, produce, or generate, and it would indeed be spectacular if language created consciousness in this sense of "creates." But in this sense of "create," language (and specifically metaphor) does not create, it discovers, the similarities that language marks. It is, I think, only because Mr. Jaynes' account of the "origin of consciousness" slips back and forth between these two meanings of "creates" that his account has any plausibility whatever.

Consider, for instance, his exposition of the metaphor, "My love is like a tin smith's scoop, sunk past its gleam in the meal-box."

The immediate correspondence here of metaphrand and metaphier, of being out of casual sight, is trivial. Instead, it is the paraphrands of this metaphor which created what could not possibly be there, the enduring careful shape and hidden shiningness and holdingness of a lasting love deep in the heavy manipulable softness of mounding time. . . . Love has not such properties except as we generate them by metaphor (pp. 57-8).

Mr. Jaynes is a good literary critic in that he calls our attention to similarities that we might otherwise have missed but that may nonetheless have been operating in our sense of the "rightness" of the metaphor. But a poet or a critic discovers an overlooked similarity in the experiential field; he does not "create" it. Indeed, a metaphor "works" and so becomes a permanent part of the vocabulary only because experience confirms it. Verbalizing the experienced similarity does indeed create something: what it creates is a verbal token that enters into social discourse, that "stands for" the experienced similarity, and that may eventually be substituted for it: the experienced similarity that the token represents may drop out of experience and be replaced by the token. That is literalization.

Mr. Jaynes' reasoning can be condensed into the following:

(1) No consciousness without metaphor; therefore, (2) metaphor causes consciousness. This is about equivalent to the following analysis of "front line," an expression sometimes used in military communiques to refer to the region of contact between enemy forces: (1) "Front line" is a metaphor created during World War I; therefore, (2) "Front line" (the expression) created front line (the form of contact between enemy forces that existed in World War I). This, surely, is wrong headed -- a novel kind of contact (trench warfare) gradually emerged; someone noticed that the trenches are in certain respects like lines and said so. Because the expression called attention to an important, and novel, feature of contact between enemy forces in this war, it took on -- it entered the common vocabulary. But once there, it acquired a life of its own: people who literalized the metaphor slipped into

assumptions about the nature of trench warfare that were false, assumptions that might, on occasion, be militarily disastrous. Metaphor, we may say, discovers genuine similarities; it may, on occasion create false ones through overextension.

If we judge that some metaphor (any metaphor) has become irremediably overextended in this way -- if we fear that we cannot escape the language trap of taking this metaphor literally -- then we might decide to abandon the expression that is the token of the metaphor. Let us, we might urge, cease to talk about front lines; that sort of talk is too misleading.

This is my recommendation regarding the term "consciousness." I think it should be dropped from any rigorous vocabulary; it has been ruined by our tendency to reify it, to take a spatial metaphor literally. The seductive power of this particular language trap is demonstrated, I think, by Mr. Jaynes' own discussion: though he tells us that consciousness is not a thing, only a function, he slips back into thinking about it as if it were a thing -- hence the pseudo questions with which the chapter is concerned. What "is" consciousness? What is "its" cause?

Well, then, if we are to abandon the term "consciousness," what term, or terms, are we to use in its place -- terms that we can hope are less misleading because they are more resistant to literalization? I suggest that what Mr. Jaynes is really concerned with is what I would call "deliberation," or "reflection," or "consideration of alternative possibilities." We all know what such terms refer to, and would agree, I believe, that much of the time,

people do not deliberate, reflect, or consider alternatives. Much of the time, most of the time perhaps, people respond, unreflectively, with learned routines, to perceived cues. These responses may be short behavioral outcomes or they may consist of long, complex serials; people even acquire meta-routines that can be brought into play (without reflection) when some serial breaks down.

Mr. Jaynes does not of course dissent from any of this, though he uses other terms to describe the process:

In driving a car, I am not sitting like a back-seat driver directing myself. . . . I am related to a world I immediately obey in the sense of driving on the road and not on the sidewalk. And I am not conscious of any of this. And certainly not logical about it. I am caught up, . . . enthralled, if you will, in a total intersecting reciprocity of stimulation that may be constantly threatening, or comforting, appealing or repelling, responding to the changes in traffic and particular aspects of it with trepidation or confidence, trust or distrust, while my consciousness is still off on other topics. (pp. 84-5).

But now, suppose it happens that on some occasion none of the routines or meta-routines that are a part of our behavioral repertoire is appropriate. Then, characteristically, we begin to reflect; we consider alternatives. These alternatives are optional scenarios; they may be "sketchy" or they may be worked out in detail; they may have very short, or very long, time horizons. They may involve

projections of ourselves into various possible futures which we compare. One can certainly, if one likes, characterize this process as involving "narratization," an analogue "I," and a metaphor "me," though I don't think we gain much by doing so. In any case, however, we are now in a position to reformulate Mr. Jaynes' central contention without reference to the misleading expression "origins of consciousness": Before the end of the third millennium people never, under absolutely no circumstances, reflected (however briefly); they never considered alternatives (however sketchy and with however short time horizons).

That is Mr. Jaynes' hypothesis. Before we consider the evidence which, in Mr. Jaynes' view, validates it, we most briefly examine the other three postulated changes and ask how Mr. Jaynes conceives them to be related to this change in the structure of human experience which we have been discussing. Consider first the matter of social control by means of hallucinated voices. Some such hypothesis seems essential if deliberation (what Mr. Jaynes calls consciousness) originated at the time and in the way Mr. Jaynes claims. Deliberation (the projection of alternative scenarios) commonly occurs, even in our modern societies, only when some behavioral routine breaks down and no appropriate meta-routine is immediately available. Breakdowns of behavioral routine must have occurred in pre-third-millennial times. Why, then, did not deliberation ensue? Obviously Mr. Jaynes must find some reason and his explanation is that at the very moment a breakdown occurred and before deliberation had time to begin, a hallucinated voice spoke to pre-third-millennium

man and told him exactly what to do.

The voice-hallucination hypothesis is also an answer to an otherwise insoluble puzzle about the nature of social control in pre-third-millennium times. Every form of social control that we know -- threat, bribery, cajolery, and rational persuasion, for instance -- presupposes some capacity, however slight, for reflection and deliberation. That is, to use Mr. Jaynes language, they all presuppose some form, however, fugitive, of an analogue "I" and a metaphor "me." Thus his account of the origin of consciousness requires that there be a form of social control that is as automatic and as unthinking as are routinized responses to sensory cues, i.e. a voice believed to be divine and which one therefore obeys instantly and without question.

But the voice-hallucination hypothesis is not dependent in a corresponding way on Mr. Jaynes' account of the origin of consciousness, for belief in divine voices, and faithful adherence to their commands, would seem to be compatible with at least a considerable refinement of deliberation. Thus the evidential relation between the two hypotheses may be expressed in the following way: Let 'p' stand for the origin-of-consciousness hypothesis and 'q' for the voice-hallucination hypothesis. Then, $p \supset q$, and $q \not\supset p$. Accordingly, independent evidence for p (i.e., evidence for p that it not also direct evidence for q) would tend to strengthen the case for q, but independent evidence for q (evidence for q that is not also direct evidence for p) would not affect the case for p.

Next, as regards the hypothesis that, before the end of the third millennium, "everyone" was schizophrenic: Though this is discussed as if it were a third great change that occurred simultaneously with the origin of consciousness and the decline in the incidence of voice hallucination, a little consideration shows that it is simply a dramatic, and therefore rhetorically effective, restatement of the first and second hypotheses taken together. That this is the case follows from Mr. Jaynes' description of "florid unmediated" schizophrenia: its symptoms, he writes, "are primarily the presence of auditory hallucination . . . and the deterioration of consciousness . . . namely, the loss of the analog 'I,' the erosion of mind-space, and an inability to narratize." (p. 408). It may indeed be the case that the first and second hypotheses, if confirmed, throw some light on the nature of "this most common and resistant of illnesses," for schizophrenia would then turn out to be, as Mr. Jaynes says, "a vestige of bicamerality, a partial relapse to the bicameral mind" (pp. 404-5). But the existence of the disease in historic times throws no light on the changes that are supposed to have occurred at the end of the third millennium. Rhetoric apart, then, the formulation of those changes as involving a radical decline in the incidence of schizophrenia adds absolutely nothing to the claims already stated in the first two hypothesis.

Finally, there is the neurological hypothesis regarding the supposed transfer of dominance (in right handed people) from the right to the left hemisphere. To ask whether certain functions could have been localized in the way Mr. Jaynes claims would be to raise a

question in neurophysiology that I am not competent to deal with. It is possible however to pose another, and more basic question: What does Mr. Jaynes hold to be the relation between "brain structure" on the one hand, and "psychological phenomena," on the other? Mr. Jaynes seems to be of at least two, and possibly more, minds about this. At one point, he explicitly rejects what may be called an identity-theory of the relation between brain state and psychological state. There is "a delusion," he writes, "in the all-too-common and unspoken tendency to translate psychological phenomena into neuro-anatomy and chemistry" (p. 18). He also rejects, again quite explicitly, all forms of dualism: dualism, "one of the great spurious quandries of modern psychology," "began its huge haunted career" with the pre-Socratics and included the "arrogant assurances" of Descartes (p. 291). What are we left with? The only positive statement I can find is the following:

Of course it is extremely hazardous thinking to isomorphize between a conceptual analysis of a psychological phenomenon and its concomitant brain structure, yet this is what we cannot avoid doing. (p. 102).

That sounds remarkably like the philosophical theory called "parallelism," and since parallelism has had a long and unhappy history it is not very encouraging. But, having assumed isomorphism despite its hazards, Mr. Jaynes proceeds as if no hazards are involved. Thus he shifts back and forth all too easily from psychological language to physiological language, often in the same

sentence. For instance:

In bicameral men . . . volition came as a voice that was in the nature of a neurological command. (p. 99).

Each person has a part of his nervous system which was divine, by which he was ordered about. (p. 201).

. . . an inaccessible voice in the nervous system . . . (p. 301).

Is it possible that what corresponds to Wernicke's area on the right hemisphere 'looks down' on Wernicke's area on the left? (p. 349).

. . . authority figures created by the nervous system out of the patient's admonitory experiences . . . (p. 411).

This is roughly equivalent to writing: "La donna ist very belle" -- which is odd, but at least intelligible because Italian, German, English and French are roughly equivalent languages (they are isomorphic). The sentences I have just quoted from Mr. Jaynes are equally odd, but there is no way of knowing whether or not they are intelligible, because it is far from settled that neurophysiology and psychology are equivalent languages. Mr. Jaynes is actually in the situation of Egyptologists before the Rosetta stone was deciphered. There were the two texts but nobody knew whether they were isomorphic or not. For all the Egyptologists knew, one text might be a declaration of war, the other a treaty of peace. But Mr. Jaynes writes as if his Rosetta stone has already been deciphered -- as if

the explanatory paradigms used in physiology and formulated in its language are known to be isomorphic with the explanatory paradigms used in psychology and formulated in its language.

Therefore, pending demonstration of the isomorphism Mr. Jaynes posits, I think we must regard the origin-of-consciousness hypothesis and the voice-hallucination hypothesis as independent of the shift-of-dominance hypothesis. Evidence for the first two would not tend to support the latter, and evidence for the latter, if it could be found, would not support the former two. But how could evidence for a shift in dominance at the end of the third millennium be found independently of some assumptions regarding isomorphism? However, though sentences like those cited above are without logical, or evidential, justification, they are nonetheless remarkably effective rhetorically: they sound convincing and cover what is actually naked speculation with a cloak of scientific respectability.

I shall return to this characteristic of Mr. Jaynes' prose when we examine the reasons for the book's success. Meanwhile we must evaluate the evidence which he has marshalled to support his assertion that great changes occurred at the end of the third millennium -- changes that turn out, as we have just seen, to be two, rather than four, in number. The evidence can only be in the form of traces -- documents, buildings, monuments, statues, figurines -- that (1) have survived down to our own time, (2) can be dated back to times not later than those in which Mr. Jaynes' great changes are alleged to have occurred, and (3) differ in specific features from any traces firmly dated to times later than those in which the changes

are thought to have occurred. Only traces that meet these three criteria are available as evidence. For such traces actually to become evidence Mr. Jaynes must show that the specific features cited are "better understood" on the origin-of-consciousness and the voice-hallucination hypotheses than on any alternative hypothesis.

I shall call this the positive case. It should be supplemented by what I shall call the negative case. This would consist in showing that the other features of these traces -- and other traces not having these features -- can be explained at least as well on the origin-of-consciousness and the voice-hallucination hypotheses as on any other hypothesis. The negative case is important because, unless it can be made, Mr. Jaynes will be left, at best, with two rival explanatory systems, each of which covers only one part of the traces that are to be explained. And this would be highly unsatisfactory to Mr. Jaynes, who above all else wants a single, all-inclusive explanation of the phenomena in question.

I shall take up first the matter of the negative case. What sorts of traces are, at least *prima facie*, inconsistent with Mr. Jaynes' hypotheses? One such class of cases is traces of large-scale organizations well before the end of the third millennium. It is possible, I suppose, to believe, without too much strain, that very small groups (e.g., nuclear families) could live on a day-to-day basis in a "signal-bound [condition], that is, responding each minute to cues in a stimulus-response manner, and controlled by those cues" (p. 140). But with larger groups -- even with groups no larger than an extended family -- it takes extreme dedication to a hypothesis to

continue to hold, that the members could live out their lives in a completely signal-bound condition. And of course there are many traces from very early times of large organizations with fairly elaborate bureaucratic structures.

Mr. Jaynes is of course not unaware of the intrinsic implausibility of the voice-hallucination hypothesis when it is applied to large-scale organizations. He suggests the possibility that in such societies the hallucinated voices may have been hierarchically organized. This sounds like an ad-hoc hypothesis on a par with the epi-cycles that were introduced to support the geocentric hypothesis. And in any case, would hierarchically organized voices eliminate the possibility, even in very small societies, of the kind of breakdown in routines that, as we have already suggested, leads to deliberation? It seems highly probable that they would not. However well organized into hierarchies the voices might be, they could hardly fail, on occasion, to give conflicting instructions, or instructions that were inappropriate for the situation in which "the gods' slaves" found themselves. It is a feature of instructions, however carefully designed, that they are too general to cover all possible circumstances: this is why judges and administrators are needed -- to find the relevant rule and apply it to the particular case. Mr. Jaynes himself agrees that eventually organizations became too large for control by hallucinated voices, however hierarchically organized. He suggests the Intermediate Period in Egypt as the period when this occurred. I am simply pointing out that it must have occurred much earlier, if indeed

there ever was a time when men were actually automata who "responded every minute to cues in a stimulus-response manner."

It is easy to think of other kinds of traces that seem inconsistent with Mr. Jaynes' hypotheses, but I shall resist the temptation to discuss them. After all, this paper is not a full-dress review of The Origin . . ., but a case study in the sociology of belief, and I need therefore only sample Mr. Jaynes' argument enough to show that grounds other than evidence must be at work in generating belief. Let me therefore simply summarize my comments on the negative case by saying that Mr. Jaynes is far from having completed it and that the onus probandi lies on him to complete it.

Next as regards the positive case: here, bearing in mind that the origin-of-consciousness hypothesis and the voice-hallucination hypothesis are not logically symmetrical, we must distinguish traces that are claimed as evidence for the former from traces that are claimed as evidence for the latter. Generally speaking, the evidence for the former is documentary -- for instance the text of the Iliad and "the dispute of a man with his Ba" -- while the evidence assembled for the latter consists in traces of buildings (any large structure that is not a dwelling and that has no other practical use), figurines (especially those with staring eyes), and burial practices (for instance, the burial of important dead as if they still lived).

I shall confine myself to discussing one example of the mass of evidence assembled for each hypothesis. Consider then the cuneiform texts that contain signs which Mr. Jaynes believes are

equivalent to such English expressions as "speaking," "uttering," "hearing," and "listening." I submit that we do not know enough about the authors of these texts nor about the genres that the texts represent to be sure that these English words are correct translations of the cuneiform signs. Nor, if indeed they are correct, do we know whether the expressions are to be understood metaphorically or (as Mr. Jaynes would have it) literally. Our conclusion can only be "not proven."

Or consider the matter of burial practices. There are surely many reasons why survivors might have chosen to bury their dead as they did. Mr. Jaynes himself suggests one such possibility -- grief. Though he rejects this possibility and concludes that survivors buried their dead as if they were alive because these survivors were literally hearing the voices of the dead who ordered their burial in this fashion, he admits that this conclusion is not "necessary," but only "consistent" with the evidence (p. 166). But he soon forgets the tentativeness that he has for once affirmed and is back once again to categorical assertions: "has no clear explanation except . . ." or its equivalent is the phrase with which he usually concludes his discussion of any trace that he regards as evidence for his hypotheses.

How are we to account, in a scientifically trained author, for this -- as it seems to me -- unwarranted assurance? And how are we to explain why a case that is persuasive⁵ for one reader seems to another at best no more than "not proven"? The account that I propose starts from the set of presuppositions underlying our work on

nonterminating disagreements and differences in world view, and applies these presuppositions to the case before us. I assume, then, that the objects of perception and cognition (what is perceived, what is understood) are the end results of processes in which some "foreground," i.e., some element in the experiential field, is mediated by a background structure consisting of memories, generalizations and attitudes. Thus the cognitive process involved in the assessment of the evidential value of some trace (say, the burial practice described above) may be represented as:

$$I = f(F,B)$$

where I = the interpretation, or assessment, of the evidential
value of the trace

F = the trace, as foreground

and B = a background structure

Obviously, differences in background structure among the individuals who happen to be assessing the same trace will result in different interpretations of that trace. What, then, might be some of the differences in background structure that lead Mr. Jaynes and his critics to such radically different interpretations of the same evidence? I shall concentrate on three such differences -- differences in what I shall call cosmological orientation, without suggesting that these are the only differences involved.

First, then, Mr. Jaynes has a preference for abrupt, dramatic and radical change -- a bias against gradualism and for discontinuity.

This preference shows up in Mr. Jaynes references to "a huge alteration in human mentality" and to "dramatic change," in his liking for the expression "de novo," and even in the title of his book. More importantly, I suggest that it accounts for his quite extraordinary hostility to Darwin. Since Darwinism reduces great changes to a very large number of very small changes occurring over immense times, it may be said to emphasize continuities instead of discontinuities, and to substitute a doctrine of gradualism for a doctrine of quantum leaps from one state to another wholly different one. No wonder, then, that Mr. Jaynes holds that Darwin "clouded the problem with his own naivete" and that the theory of natural selection is "a very suspicious totem of evolutionary mythology" (p. 9).

Second, he has a bias against consciousness -- against narration, spatialization, the analog "I" and the metaphor "me" -- and a corresponding bias in favor of the unconscious state that he calls bicamerality -- the state in which there is no reflection, no deliberation, and no interior debate because the gods speak directly to men. Thus, for instance, Mr. Jaynes writes with evident sympathy of the "yearning for divine volition and service that is with us still" (p. 313, see also p. 318); he contrasts the "sands of subjective uncertainties" that characterize modern life (p. 320) with the "absolutes" of life in bicameral times; and he describes the "nostalgic anguish" that "subjectively conscious people" feel for "the lost bicamerality" (p. 297). And when he discusses modern schizophrenia it is in terms reminiscent of R. D. Laing's thesis

that schizophrenics are the only sane people in our insane modern world: the problem for the modern schizophrenic, Jaynes writes, is that his "relapse" into bicamerality

is only partial. The learnings that make up a subjective consciousness are powerful and never totally suppressed. And thus the terror and the fury; the agony and the despair . . . the lack of cultural support and definition for the voices . . . produces a social environment that is a far different thing from the behavior of the absolutely social individual of bicameral societies. (p. 432).

Mr. Jaynes, it would seem, holds that we would all be better off if "everyone" were once again schizophrenic, if we could somehow return to a bicameral society which the disease of thinking too precisely on the event, the anguish of decision-making in an uncertain world, had not yet infected.

The third, and last, cosmological orientations that I shall mention is Mr. Jaynes' desire for a sweeping, all-inclusive formula that explains everything that has happened, from the frequency of the occurrence of pop-eyed figurines and the oracle at Delphi to modern hypnosis and schizophrenia. Thanks to his discovery of the changes that occurred toward the end of the third millennium BC it is possible, he believes, to view world history as a "drama," as an "immense scenario" (p. 436). So, too, in a particularly revealing passage:

We are now at last in a position where we can look back and see the history of mankind of this planet in its proper value for the first time. Our view of human history here must be that of the far furthest gradeur. . . . We see mankind against his entire evolutionary background, where civilizations, including our own, are but as mountain peaks in a particular range against the sky. (p. 317).

Since, in my view at least, Mr. Jaynes' book reflects these three cosmological orientations very strongly, only those who share these biases to some degree are likely to find the book convincing; those who do not will reject his arguments in whole or in part.

I shall discuss the latter point first. Consider, then, Mr. Jaynes' hostility to Darwin, his rejection of natural selection, and his insistence that consciousness emerged suddenly from a type of human experience that was radically different in kind. The alternative hypothesis is that no radical break occurred, either toward the end of the third millennium or elsewhere. Rather, deliberation (whether measured in terms of frequency of occurrence, variety of alternatives examined, complexity of scenarios reviewed, and length of time-horizons taken into account) has been a component, however flickering, in human experience from the earliest times. Indeed, such a component can be inferred in the behavior of the other primates and perhaps in other animals as well. In a word, Mr. Jaynes' central hypothesis presupposes a discontinuity bias and is unlikely

to appeal to those whose cosmological orientation emphasizes continuities and who tend, therefore, to treat all changes as differences in degree, rather than as differences in kind.

Or consider Mr. Jaynes' belief in an all-inclusive, complete explanation of the course of human history. Leaving aside for the moment the particular explanation he has proposed, many historians are profoundly skeptical of any single explanatory principle. Whereas writers like Toynbee and Sorokin and Spengler seem to share Mr. Jaynes' conviction that, though the world may have the superficial appearance of a mighty maze, it is nevertheless not without a plan, other historians see only "the turbulent movement" of "an unfathomed sea" and confess that, if there be a plan, it is "on a scale beyond [our] comprehension."⁶ Historians who share Mr. Jaynes' cosmological orientation -- this is my thesis -- will take more seriously any trace put forward as containing evidence for some "immense scenario" than will historians who are skeptical of the very possibility of such scenarios. Given a difference in background structure (B) of this magnitude, the same evidence (F), will be interpreted (I) very differently, and a nonterminating disagreement is likely to ensue.

But this contrast in cosmological orientation is of course by no means confined to historians. Scientists, too, are likely to have a differential tolerance for what all scientists recognize must be a certain looseness of fit between any given hypothesis and the evidence assembled for it. All may agree that, ideally, the evidence ought to fit so neatly that no alternative explanation is possible. All may also agree that this ideal is not attainable in

real life. Finally, all probably agree that, the more inclusive the hypothesis, the looser the fit is likely to be, but that, scope being a positive good, we ought to be willing to tolerate a certain looseness of fit in hypotheses of very great scope. But how much is scope worth? Differential evaluations of the worth of scope are responsible, in part, for the nonterminating disagreements that arise from time to time in all scientific disciplines.⁷

So much in general. If we now apply these observations to the examination that neurologists, archaeologists, linguists and psychologists might make of those parts of Mr. Jaynes' discussion that are relevant to their particular disciplines, I predict that they would make differential assessments of the evidential value of the traces he cites -- assessments that reflect a differential tolerance for looseness of fit on the part of the scientists concerned. Nevertheless, and taking Mr. Jaynes' argument as a whole, I also predict that the reaction of most scientists would be skeptical if not hostile. If that were to prove to be the case, it would be due, I think, chiefly to the fact that by training, and even more perhaps by temperament, their mistrust of simplicity (following Claude Bernard's injunction) is far greater than Mr. Jaynes.

Indeed, in any cost benefit analysis that Mr. Jaynes might make of the relative values of seeking and of mistrusting simplicity, the value he would assign to simplicity would outweigh any possible benefits that might be derived from mistrust. One is inclined to say that, so far from mistrusting simplicity, Mr. Jaynes revels in it. This being the case, we have to conclude that, despite its

scientific trappings, his book is not a scientific treatise at all -- not scientific history nor scientific archaeology nor scientific neurophysiology. And if that is the case, then it should not be judged by the usual criterion for assessing scientific hypothesis.

But if the book is not a scientific treatise, what is it? And what criteria are appropriate for evaluating it? I think that Mr. Jaynes is not so much offering us evidence as a vision -- not evidence that we are to weigh, but a vision that may win us, not because it fits the facts more or less loosely, but because it satisfies some deep, and extracognitive, needs of our natures. In a word, Mr. Jaynes' book belongs to the same genre as A Study of History and The Decline of the West, the genre that I call secular theology -- "theology" because, like the great theological works of past ages, it presents a vision of the world as a whole. I call it "secular" both because this vision is confined to what St. Augustine called "the earthly city" and also because it is composed in a language that looks scientific, rather than in the language of theology.

This certainly does not dissolve the disagreement between Mr. Jaynes and his critics but it does refocus it. The disagreement, properly understood, is not over whether the evidence Mr. Jaynes presents warrants the conclusions he reaches -- obviously it does not -- for the traces he discusses are not, strictly speaking, evidence and the assertions he makes are not, strictly speaking, conclusions. The disagreement is over the utility of a kind of writing in which

what looks like evidence and conclusions is but the articulation of "an immense scenario" which appeals, if it does appeal, because of its immensity and not because of the evidence for it. It is a disagreement, in a word, over the value of secular theology.

My description of Mr. Jaynes' book as secular theology has already brought us to the final topic of this paper -- the reasons for its success, despite its lack of scientific rigor. We now see that it is not, despite, but precisely because of, its lack of rigor that the book appeals. It appeals because in our secularized society there are still people who crave certainty, absolutes, final solutions, a meaningful world rather than a merely turbulent sea. On the other hand, these same people are too much persuaded of the preeminence of science as the way to truth, to accept any assertions that seem to lack the cachet of science. Secular theology is the literary form that both gives expression to, and that seeks to reconcile, these two strains in modern culture.⁸

If I am right, then, one source of the book's appeal is that it is a new gospel, a world-picture startlingly different from any we are accustomed to and one in which everything has its secure place and all is accounted for. But that is not the book's sole source of appeal. It attracts as well those who resonate with the romantic primitivism expressed in Mr. Jaynes' longing for "lost bicamerality." Dislike, distrust, of consciousness is almost a hallmark of modern culture. It began at least as long ago as Dostoevsky,⁹ it is strongly expressed in Nietzsche,¹⁰ it is a principal motif in Lawrence,¹¹ it dominates Sartre -- think of his anguish (not too strong a word) at

his inability to collapse his pour-soi mode of being into the en-sol.¹² And what is true of the high culture is as characteristic of low and middle-brow culture -- Zen, transcendental meditation, sensitivity training and the other phenomena of the counterculture that arose in the 60s and that are still with us. People who participate in this climate of opinion are likely to resonate with the thesis that consciousness is a late, dateable, and on the whole regrettable arrival on the human scene.

Resonances of this kind, then, are important elements in the formation of belief. Belief is certainly on occasion generated by evidence, but it is seldom generated purely, or exclusively, by evidence. Given the looseness of fit that characterizes the relation between generalizations and data, something more than, or different from, evidence often tips the scales in the direction of one alternative rather than another. Usually the role of these extra-cognitive elements in inducing belief is not very noticeable. Mr. Jaynes' book is useful precisely because the role of such extra-cognitive elements as the three cosmological orientations I have been discussing is plain to see. This is why his book is a good case study in the sociology of belief.¹³

FOOTNOTES

1. J. Jaynes, The Origin of Consciousness in the Breakdown of the Bicameral Mind (Boston, 1977).
2. The primacy of the origin of consciousness in Mr. Jaynes' thinking was confirmed by him in the panel discussion at Caltech in November 1978.
3. It is not at all clear who "we" are -- here or elsewhere in the book. Is "we" the speakers of what Whorf called SAE? or is it modern (how modern?) man? or post-third-millennium man? or only the author and his reader? I suspect that the denotation of "we" shifts from one occasion to another.
4. Beyond Good and Evil (trans. by M. Cowan), Chicago, 1955, p. 19.
5. At one point during the panel discussion Mr. Jaynes remarked, rather complacently, I thought, that his conclusions regarding lateralization and localization of function were "astonishing." "Incredible," replied Eron Zaidel. That is the kind of difference in assessment that I hope to explain.
6. Cambridge Medieval History VIII, 819; E. L. Woodward, Short Journey (London, 1942), 141.

7. It was Claude Bernard, I think, who urged his fellow scientists to "seek simplicity: but to "mistrust" it. The fact that all scientists probably agree with this advice, and hold that they actually follow it, does not prevent disagreements from occurring. To the extent that scientists do a kind of cost/benefit analysis of the relative values of seeking and mistrusting simplicity they will compute the payoff differently if they weigh differently the probability of cosmological simplicity.

8. Most secular theologians would indignantly reject this account of how their writings function in generating belief; I am not at all sure that Mr. Jaynes would. My reason is a remark inserted at the very end of his book. This remark follows his account of what he calls "scientism," a kind of thinking that is exemplified by such schools of thought as Marxism, psychoanalysis and behaviorism. All scientisms, according to Mr. Jaynes, have certain features in common: a "rational splendor" that "explains everything," a "charismatic leader," a series of canonical texts, and the requirement of total commitment. It will be seen that the genre that I have characterized as secular theology is identical with Mr. Jaynes' scientism, which, as he will say, "are clusters of scientific ideas which come together . . . into creeds of beliefs, scientific mythologies which fill the felt void left by the divorce of science and religion in our time" (p. 441). But now, having giving this devastating indictment of scientism, or secular theology, Mr. Jaynes casually remarks, "and this essay

is no exception."

When during the panel discussion I quoted this sentence to Mr. Jaynes and asked what we are to make of it, he evaded me. I think he cannot want to face its implications. For, in the whole book, up to this final page, Mr. Jaynes has written in a way that leads every reader to assume that Mr. Jaynes expects his assertions to be tested by scientific, not by visionary, criteria. If, as he was finishing it, it occurred to him that he had written not a scientific paper, but a visionary tract, no wonder that the discovery, if acknowledged at all, is made in such an off-hand way.

9. The protagonist of Notes from the Underground held that "any sort of consciousness is a disease."
10. For instance, in "On Truth and Lie": "In some remote corner of the universe, poured out and glittering in innumerable solar systems, there once was a star on which clever animals invented knowledge. That was the haughtiest and most mendacious minute of 'world history' -- yet only a minute."
11. Thus Birkin in Women in Love: "You yourself, don't you find it a beautiful clean thought, a world empty of people, just uninterrupted grass, and a hare sitting up?"

- 12 In Nausea, Roquetin says, "I, too, wanted to be," and in The Reprieve Daniel, a homosexual, exclaims "Just to be in the dark, at random! To be homosexual just as the oak is an oak. To extinguish myself."
13. Some readers may accuse me of being as speculative about Mr. Jaynes as I accuse Mr. Jaynes of being about bicamerality. But my suggestions, unlike Mr. Jaynes', need not remain merely speculations. As a result of the work on world views that my collaborators and I have done, we now have considerable experience in testing hypotheses regarding the ways in which different cosmological orientations are expressed in various kinds of cultural products. Hence, though the orientations I have attributed to Mr. Jaynes are not among those we have already studied, it would be possible, were it though worthwhile, to apply the procedures we have used in other cases to Mr. Jaynes' case. As for my suggestion that Mr. Jaynes' book appeals chiefly to those who resonate with its underlying cosmological orientations: although we have not yet carried out tests of this kind, we know in principle how to go about it. The principal problem is not theoretical but practical: it is the problem of finding enough readers of the book to obtain a statistically significant sample.